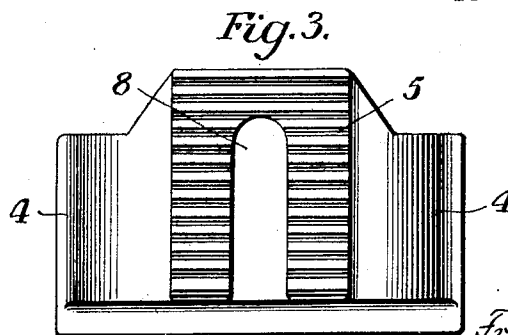
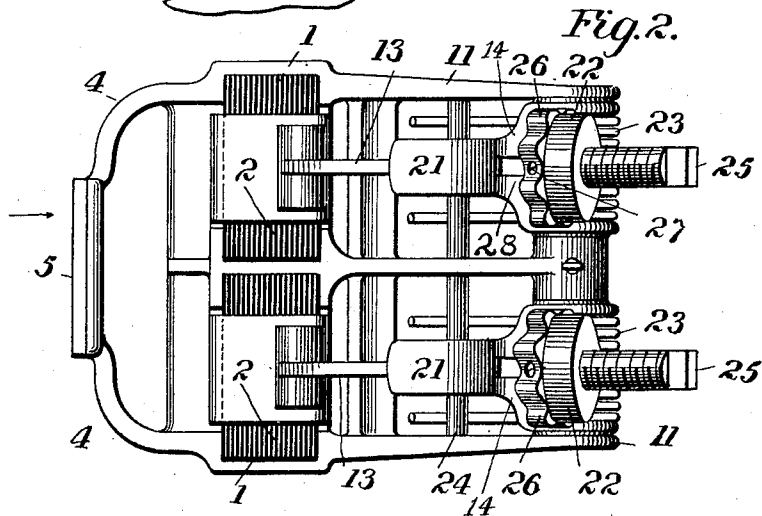
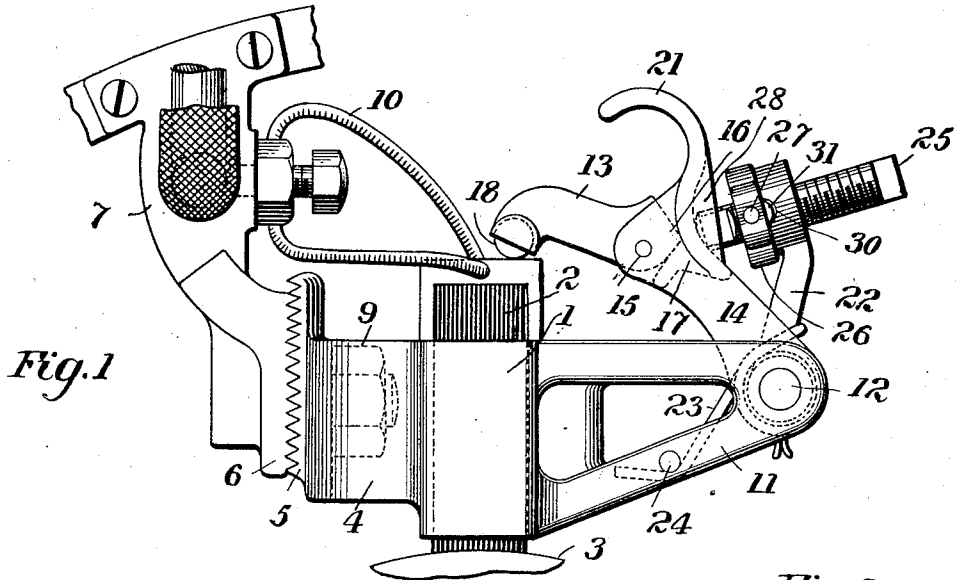


F. L. SESSIONS.
BRUSH HOLDER FOR MOTORS OR GENERATORS.
APPLICATION FILED JUNE 12, 1906.

1,004,479.

Patented Sept. 26, 1911.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK L. SESSIONS, OF COLUMBUS, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE JEFFREY MANUFACTURING COMPANY, A CORPORATION OF OHIO.

BRUSH-HOLDER FOR MOTORS OR GENERATORS.

1,004,479.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed June 12, 1906. Serial No. 321,397.

To all whom it may concern:

Be it known that I, FRANK L. SESSIONS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Brush-Holders for Motors or Generators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to brush-holders of dynamo-electric machines and its object is to provide certain functional and structural improvements in apparatus of the character described. These improvements will be hereinafter set forth in connection with the accompanying drawings of which—

Figure 1 is a side elevation of a brush-holder constructed in accordance with the invention, the brush-holder being secured to a suitable support, and with a brush and means for pressing it against the commutator in operative positions. Fig. 2 is a plan view of the holder removed from the support. Fig. 3 is an end view of the apparatus shown in Fig. 2, looking in the direction of the arrow the brushes and pressure devices being removed.

Referring now to the drawings in detail it will be seen that the brush-holder comprises a brush box or guide 1 in which the brush or brushes 2 is or are adapted to move to and from the commutator 3. To one side of the brush-guide is secured an arm 4. The arm is secured at its ends to the brush-guide but between its ends is separated therefrom. Upon the outside of this arm is a face 5 adapted to engage with a support for the holder. In this case the face 5 is shown as serrated and adapted to mesh with corresponding serrations upon the face 6 of the support 7 which may be secured to any suitable portion of the dynamo electric machine. The serrations insure that the holder will be securely held in whatever position it may be fastened but permits of ready adjustment.

To secure the holder to the support a screw secured to the support and projecting from the serrated face 6 extends through the

slot 8 in the face 5 upon the arm 4 to the interior of the arm. Between the arm and the brush-guide a nut 9 is located upon the screw and when tightly turned against the inner face of the arm the holder is firmly secured in position. The slot 8 permits the vertical movement of the holder with relation to the support upon sufficient loosening of the nut 9 to permit disengagement of the serrations upon the engaging faces of the support and holder. It will be noted that by placing the nut between the supporting arm 4 and the brush-guide and also by locating it within the edges of the box that great compactness is secured.

In order that an efficient electrical connection may be secured between the brush and the support 7 a flexible conductor 10 is secured to the brush and to the support, thus insuring good electrical connection even if there should not be good contact at the faces 5 and 6.

Upon the opposite side of the brush-guide 1 from the supporting arm 4 extends a bracket 11 which carries the means for pressing the brush against the commutator. This means comprises a member adapted to bear upon the brush and which is pivoted upon the rod 12 secured in the bracket 11. This member consists of two parts 13 and 14 pivoted together at 15, the inner end of the part 13 being adapted to come against stops 17 upon the part 14 whereby the upward movement of the part 13 with relation to the part 14 is limited while it may move freely downward. In other words, a knuckle joint is formed, whereby the part 13, when the part 14 is pulled back, is permitted to fall downward in a protected position where it will be less likely to receive accidental blows. That end of the part 13 which is adjacent to the brush is suitably finished to bear upon the brush and may be provided with a circular piece 18 fitting in a recess in the end of the part 13 and which may be secured thereto by bending overlapping ends of the piece 13 into recesses in the ends of the piece 18 as fully set forth in my United States Patent No. 813,523, granted

February 27, 1906. As has already been indicated, the part 14 is pivoted at its end opposite the pivot 15 upon the rod 12 and may be provided with a handle 21 for relieving the pressure upon the brush.

In order that the member bearing upon the brush may be pressed against it a member 22 is provided which is pivoted upon the rod 12 and is spring-pressed toward the member bearing upon the brush by means of a spring 23 coiled upon the rod 12 and engaging with the member 22 at its center, its ends engaging with the rod 24 fixed in the bracket 11.

In order that the pressure of the spring-pressed member upon the member adapted to bear upon the brush may be regulated or adjusted, an adjustable member is interposed between the spring-pressed member and the member adapted to bear upon the brush. This adjustable member consists of a screw 25 adapted to bear with one end against the part 14 of the member bearing upon the brush and to pass freely through a hole in the member 22. The length of screw which is interposed between the part 14 and the member 22, and therefore the pressure upon the brush, is regulated by a nut 26 upon the screw 25 and interposed between the member 22 and part 14 so that the member having the hole through which the screw passes, in this case the member 22, bears against the nut. By moving the nut along the screw, by turning it, the length of screw interposed between the part 14 and member 22 may be varied, and the nut can be locked in any desired position upon the screw by means of a set screw 27.

To prevent rotation of the nut with relation to the member 22, the nut and member are provided with corresponding recesses 30 and projections 31 whereby engagement of the nut and member is effected. The corresponding recesses 30 and projections 31 are rounded as shown in the drawings so that when sufficient turning force is applied to the nut, the projections 31 will slip out of engagement with the recesses 30 and adjustment of the position of the nut upon the screw will be permitted. The spring pressure, however, which holds the member 22 in contact with the nut 26 is sufficient when the projections 31 engage with the recesses 30 to prevent the rotation of the nut with respect to the screw which might result from the jars and vibration to which the mechanism is subjected. The member adapted to bear upon the brush may be arranged to engage with the screw, to prevent turning of the latter, by means of ribs 28 adapted to receive between them the slatted-off end of the screw as shown. It will now be seen that the screw will be prevented from turning with the nut when

the latter is turned to adjust the length of screw interposed between the spring-pressed member and the member adapted to bear upon the brush.

It is to be observed that adjustment of the screw 25 may be effected by loosening the set screw of the nut 26 and turning the screw, the nut being held against turning with the screw by reason of its engagement with the member 22. To facilitate the engagement of the screw with a wrench its outer end may be made square as shown. It will of course be understood that before the screw can be turned, it must be lifted clear of the ribs 28.

The invention has been illustrated as embodied in what is considered its best structure but other embodiments may be employed without departing from the spirit of the invention. The invention should not therefore be limited to the structure shown.

What I claim is:

1. In a brush-holder the combination with a pivoted member adapted to bear upon the brush, of a spring-pressed member supported independently of the said pivoted member, and a member adapted to be adjusted, interposed between the said pivoted member and the said spring-pressed member.

2. In a brush-holder, the combination with a pivoted member adapted to bear upon the brush, of a pivoted spring-pressed member pivoted to relatively stationary parts of the brush holder and a member, adapted to be adjusted, interposed between the aforesaid members.

3. In a brush-holder, the combination with a pivoted member adapted to bear upon the brush, of a pivoted spring-pressed member and a member, adapted to be adjusted, interposed between the aforesaid members, said pivoted members having the same axis.

4. In a brush-holder, the combination with a pivoted member adapted to bear upon the brush, of a spring-pressed member supported independently of the said pivoted member and a screw-threaded member adapted to be adjusted, interposed between the said pivoted member and the said spring-pressed member.

5. In a brush-holder, the combination with a member adapted to bear upon the brush, of a spring-pressed member, a screw-threaded member interposed between the member adapted to bear upon the brush and the spring-pressed member, and a separate nut on the screw-threaded member between said spring-pressed member and the member adapted to bear upon the brush.

6. In a brush-holder, the combination with a member adapted to bear upon the brush, of a spring-pressed member supported independently of the said member, a screw-threaded member interposed between the

member adapted to bear upon the brush and the spring-pressed member and a nut on the screw-threaded member between said spring-pressed member and the member adapted to bear upon the brush, the spring-pressed member and the nut having corresponding projections and recesses, whereby said spring-pressed member and nut engage with each other.

7. In a brush-holder, the combination with a member adapted to bear upon the brush, of a spring-pressed member, a screw-threaded member interposed between the member adapted to bear upon the brush and the spring-pressed member and a nut on the screw-threaded member between said spring-pressed member and the member adapted to bear upon the brush, said nut being adapted to engage with said spring-pressed member.

8. In a brush-holder, the combination with a member adapted to bear upon the brush, of a spring-pressed member, a screw-threaded member interposed between the member adapted to bear upon the brush and the spring-pressed member and a nut on the screw-threaded member.

9. In a brush-holder, the combination with a member adapted to bear upon the brush, of a spring-pressed member, a screw-threaded member interposed between the member adapted to bear upon the brush and the spring-pressed member, one of the members between which the screw-threaded member is interposed having a hole permitting the free passage of the screw-threaded member, and a nut upon said screw-threaded member between said spring-pressed member and said member adapted to bear upon the brush, said nut being adapted to engage with the said member having a hole.

10. In a brush-holder, the combination with a pivoted member adapted to bear upon the brush, the said member comprising two parts connected by a knuckle joint permitting free relative movement of the parts in one direction but limiting it in the other, one of said parts being pivoted to the supporting means and the other part being adapted to bear upon the brush, a spring-pressed member and a member, adapted to be adjusted, interposed between the aforesaid members, the interposed member being adapted to bear upon the said part pivoted to the supporting means.

11. In a brush-holder, the combination with a brush guide, of a bracket secured thereto, a rod mounted in said bracket, a member adapted to bear upon the brush pivoted on said rod, a spring-pressed member also pivoted on said rod, and a member, adapted to be adjusted, interposed between the aforesaid members, the spring acting upon said spring-pressed member being coiled about said rod and engaging with

said bracket and said spring-pressed member.

12. In a brush-holder, the combination with a member adapted to bear upon the brush, of a spring-pressed member, a screw-threaded member interposed between the aforesaid members, one of the members between which the screw-threaded member is interposed having a hole permitting the free passage of the screw-threaded member, a nut upon said screw-threaded member between said spring-pressed member and said member adapted to bear upon the brush, said nut engaging with the member having the said hole to prevent relative turning, and means for securing said nut upon said screw-threaded member.

13. The combination with a brush, of a brush holder comprising a spring-pressed member, a screw-threaded member interposed between the spring-pressed member and the brush, said spring-pressed member having a hole through which the said screw-threaded member passes freely, a nut upon said screw-threaded member between said spring-pressed member and said brush, said nut engaging with the spring-pressed member to prevent relative turning, and means for securing said nut upon said screw-threaded member.

14. In a brush holder, the combination with a member adapted to bear upon the brush of a spring-pressed member, a screw-threaded member interposed between the aforesaid members, and a nut on said screw-threaded member, said screw-threaded member and said member adapted to bear upon the brush being adapted to engage with each other to prevent turning of the screw-threaded member.

15. In a brush holder, the combination with a member adapted to bear upon the brush of an independently supported spring-pressed member, a screw-threaded member interposed between the aforesaid members, and a nut on said screw-threaded member, said member adapted to bear upon the brush having ribs adapted to receive between them the end of said screw-threaded member, the said end being shaped to engage with said ribs to prevent turning of the screw-threaded member.

16. In a brush holder comprising a brush guide, the combination of a pivot rod, a device pivotally mounted on the rod and adapted to bear upon a brush in the said guide, a second rod parallel to the pivot rod, and a spring engaging at its center with the pivoted device to press it against the brush and at its ends with the said second rod, the spring, intermediate the said points of engagement, being coiled about the said pivot rod.

17. In a brush holder comprising a brush

guide, the combination of parallel bracket
parts, a pivot rod extending between them,
a device pivotally mounted upon the rod and
adapted to bear upon a brush in the guide,
5 a second rod extending between the bracket
part parallel to the pivot rod, and a spring
engaging at one point with the pivoted de-
vice to press it against the brush, and at an-
other point with the said second rod, the

spring, intermediate the said points, being 10
coiled about the pivot rod.

In testimony whereof I affix my signature,
in presence of two witnesses.

FRANK L. SESSIONS.

Witnesses:

E. P. SNIVELY,

C. L. McCONKEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
